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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/571,063

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Sunao Aoki

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EXAMINER

STEINBERG, JEFFREY S

ART UNIT

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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/571,063	Applicant(s) AOKI ET AL.	
	Examiner Jeffrey S. Steinberg	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,4 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Application has been examined. The Restriction Requirement has been withdrawn. The original claims 3-5 and 7-18 remain pending. The examination results are as follows.

Claim Rejections - 35 USC § 112

2. Claims 5 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "narrow" in claims 5 and 8 is a relative term which renders the claim indefinite. The term "narrow" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 3-5 and 7-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujiwara et al.(7,113,158) in view of a US Patent to Hirimai (7446733), and further in view of a US Patent Application Publication by Maeda (2007/0152934).

Regarding Claim 3, Fujiwara discloses a display panel (Col. 4, l. 64) comprising: display image generating means (1) for generating a display image according to inputted display data; the display image generating means being an active matrix type display panel (Col. 10., ll. 10-11) but fails to disclose a display image separating means for separating the display image, at one time or in a time division manner, according to a plurality of viewpoints, aperture sections in each pixel pattern of the display panel having a width set so as not to fall within a range specified by the following inequality: 2 micrometers (minimum width of the aperture sections in the pixel) < 7 micrometers.

Hirimai teaches a “time division basis” (Fig. 49; Col. 40, ll. 62-64) as well as the principle of “image width modulation.” (Fig. 44, Col. 10, ll. 22-23).

Maeda teaches an improvement of the aperture ratio through the use of a low temperature polycrystalline Si-transistor (Pg. 12, ¶[0307]).

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Fujiwara, Hirimai and Maeda are analogous because they are all concerned with the same endeavor, Display Apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by Fujiwara with the teachings of Hirimai and Maeda since such a modification would have added quality to the performance of the display device.

Regarding Claim 4, the Fujiwara-Hirimai-Meda Combination discloses the display panel according to claim 3, wherein the width of the aperture sections in the pixel pattern of the active matrix type display panel is set so as not to fall within a range specified by the following inequalities: $2\text{ }\mu\text{m} < (\text{minimum width of the aperture sections in the pixel}) < 8\text{ }\mu\text{m}$, and $10\text{ }\mu\text{m} < (\text{minimum width of the aperture sections in the pixel}) < 16\text{ }\mu\text{m}$. Maeda further teaches an improvement of the aperture ratio through the use of a low temperature polycrystalline Si-transistor (Maeda, Pg. 12, ¶[0307]), where “the pixel aperture ratio becomes considerably low.”(Emphasis supplied)(Id.).

Regarding Claim 5, Fujiwara, discloses a display panel comprising: display image generating means (1) for generating a display image according to inputted display data; the display image generating means being an active matrix type display panel (Col. 10., ll. 10-11) but fails to disclose a display image separating means for separating the display image, at one time or in a time division manner, according to a plurality of viewpoints, and a light shielding film being provided to avoid that the light enters aperture sections, in each of the display panel having a narrow gap.

Hirimai teaches a time division manner according to a plurality of viewpoints, the display image generating means being an active matrix type display panel (Fig. 50; Col. 6, l. 1; and Col. 10, ll. 22-23).

Maeda teaches a light shielding film(Pp. 7-8, ¶[0252]) being provided to avoid that the light enters aperture sections, in each pixel pattern of the display panel, having an improved aperture ratio (Maeda, Pg. 12, ¶[0307]), where “the pixel aperture ratio becomes considerably low.”)(Emphasis supplied)(Id.).

Regarding Claim 7, the Fujiwara-Hirimai-Maeda Combination discloses the display panel according to claim 5, wherein the width of the aperture sections shielded by the light-shielding film is set to satisfy the following inequality: 2 μ m (minimum width of the aperture sections in the pixel) < 7 μ m. US Patent Application Publication by Maeda, teaches an improvement of the aperture ratio through the use of a low temperature polycrystalline Si-transistor. (Maeda, Pg. 12, ¶[0307]).

Regarding Claim 8, the Fujiwara-Hirimai-Maeda Combination discloses the claimed invention, and further discloses the active matrix type display panel includes: an auxiliary capacitor in the pixel; and auxiliary capacity wiring constituting the auxiliary capacitor (Maeda, Fig. 2, Pg. 14, ¶[0328]) the auxiliary capacity wiring having a narrow line width at an intersection with a source line and having a broad line width in a pixel pattern.

Regarding Claim 9, the Fujiwara-Hirimai-Meda Combination discloses the claimed invention, and further discloses the active matrix type display panel is a TFT (thin film transistor) driven type display panel. (Maeda, Pg. 11, ¶[0293]).

Regarding Claim 10, the Fujiwara-Hirimai-Meda Combination discloses the claimed invention, and further discloses the display panel. (Fujiwara, Col. 4, l. 64).

6. Claims 11-12 are rejected under 35 U.S.C. Sec. 103(a) as being unpatentable over Fujiwara et al.(7,113,158) in view of a US Patent Application Publication by Maeda (2007/0152934), and further in view of a US Patent to Yamazaki et al. (7,098,069).

Regarding Claims 11-12 (New), Fujiwara discloses a display panel (Col. 4, l. 64) comprising: a display image generator configured to generate a display image according to inputted display data, the display image generator comprising an active matrix type display panel (Col. 10., ll. 10-11). Fujiwara fails to disclose the active matrix type display panel comprising: signal lines; auxiliary capacitors; and aperture sections provided between the signal lines and the auxiliary capacitors; and a display image separator configured to separate the display image according to a plurality of viewpoints; and wherein a parameter of the aperture sections is chosen to maintain, below a predetermined crosstalk value, any crosstalk caused by diffraction of light which has passed through the display image separator and into the aperture sections.

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Maeda teaches an improvement of the aperture ratio through the use of a low temperature polycrystalline Si-transistor (Pg. 12, ¶[0307]).

Yamazaki teaches an auxiliary electrode which necessarily requires extra wiring (Fig. 11A: 23, Col. 24, ll. 19-21).

Fujiwara, Maeda and Yamazaki are analogous because they are all concerned with the same endeavor, Display Apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by Fujiwara with the teachings of Maeda and Yamazaki since such a modification would have added quality to the performance of the display device.

7. Claim 13 is rejected under 35 U.S.C. Sec. 103(a) as being unpatentable over Fujiwara et al.(7,113,158) in view of a US Patent Application Publication by Maeda (2007/0152934), in view of a US Patent to Yamazaki et al. (5,600,461), and further in view of a US Patent to Ueda et al. (5,600,461).

Regarding Claim 13 (New), the Fujiwara-Maeda-Yamazaki Combination discloses the display panel of claim 11, but fails to disclose wherein the width is chosen not to be in a range of more than 2 micrometers and less than 7 micrometers.

Ueda teaches that there can be no gap between the capacitor and signal/source line (Fig. 34(a)).

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The Fujiwara-Maeda-Yamazaki Combination and Ueda are analogous because they are all concerned with the same endeavor, Display Apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by the Fujiwara-Maeda-Hirama-Yamazaki Combination and Ueda since such a modification would have added quality to the performance of the display device.

9. Claim 14 is rejected under 35 U.S.C. Sec. 103(a) as being unpatentable over Fujiwara et al.(7,113,158) in view of a US Patent Application Publication by Maeda (2007/0152934), in view of a US Patent to Yamazaki et al. (5,600,461), and further in view of a US Patent to Murukami et al. (6,040,814).

Regarding Claim 14 (New), Fujiwara-Maeda-Yamazaki Combination discloses the display panel of claim 11, but fails to disclose wherein the predetermined crosstalk value is 5.6.

Murukami et al. teaches prevention of crosstalk. (Col. 10, ll. 16-21).(The Examiner takes Official Notice that prevention of crosstalk, being desired, is an improvement over a crosstalk value of 5.6).

The Fujiwara-Maeda-Yamazaki Combination and Murukami are analogous because they are all concerned with the same endeavor, Display Apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device

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disclosed by the Fujiwara-Maeda-Yamazaki Combination and Murukami since such a modification would have added quality to the performance of the display device.

10. Claims 15-18 are rejected under 35 U.S.C. Sec. 103(a) as being unpatentable over Fujiwara et al.(7,113,158) in view of a US Patent Application Publication by Maeda (2007/0152934), in view of a US Patent to Sonchra (7,233,441), in view of a US Patent to Murukami et al. (6,040,814), and further in view of a US Patent to Yamazaki et al. (5,600,461).

Regarding Claim 15 (New), Fujiwara et al. discloses a display panel comprising: a display image generator (Col. 2, ll. 11-15) configured to generate a display image according to inputted display data, the display image generator comprising an active matrix type display panel (Col. 10., ll. 10-11), the active matrix type display panel comprising: signal lines. Fujiwara fails to disclose auxiliary capacitors; and auxiliary capacity lines extending essentially orthogonally to the signal lines and connecting to the auxiliary capacitors; aperture sections provided between the signal lines, the auxiliary capacity lines, and the auxiliary capacitors; and a display image separator configured to separate the display image according to a plurality of viewpoints; and wherein a parameter of the auxiliary capacity lines is chosen to control negative capacitance and thereby to maintain, below a predetermined crosstalk value, any crosstalk caused by diffraction of light which has passed through the display image separator and into the aperture sections.

Maeda teaches auxiliary capacitors. (Fig. 2, Pg. 14, ¶[0328]) in addition to an improvement of the aperture ratio through the use of a low temperature polycrystalline Si-transistor (Pg. 12, ¶[0307]).

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Sonehara teaches a multi-viewpoint-light-beam-group generating device. (Col. 1, ll. 45-51).

Murukami et al. teaches prevention of crosstalk. (Col. 10, ll. 16-21).

Yamazaki teaches an auxiliary electrode which necessarily requires extra wiring (Fig. 11A: 23, Col. 24, ll. 19-21).

Fujiwara, Maeda, Sonehara and Murukami and Yamazaki are analogous because they are all concerned with the same endeavor, Display Apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by Fujiwara with the teachings of Maeda, Sonehara and Murukami since such a modification would have prevented crosstalk in the display device.

Regarding Claim 16 (New), the Fujiwara-Maeda-Sonehara-Murukami-Yamazaki Combination discloses the display panel of claim 15, and Maeda further discloses wherein the parameter is width of the auxiliary capacity lines at an intersection of the auxiliary capacity lines and the signal lines. (Fig. 2, Pg. 14, ¶[0328]). Also, Yamazaki teaches an auxiliary electrode which necessarily requires extra wiring (Fig. 11A: 23, Col. 24, ll. 19-21).

Regarding Claim 17 (New), the Fujiwara-Maeda-Sonehara-Murukami-Yamazaki Combination discloses the display of claim 15, and Maeda further discloses wherein the parameter is area of the auxiliary capacity lines at an intersection of the auxiliary capacity lines and the signal lines.

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(Pg. 19, ¶¶[0386-0387]). Also, Yamazaki teaches an auxiliary electrode which necessarily requires extra wiring (Fig. 11A: 23, Col. 24, ll. 19-21).

Regarding Claim 18 (New), Fujiwara discloses a display panel comprising: a display image generator (Col. 2, ll. 11-15) configured to generate a display image according to inputted display data, the display image generator comprising an active matrix type display panel (Fig. 4, Col. 6, ll. 13-15), but fails to disclose the active matrix type display panel comprising: signal lines; auxiliary capacitors; and aperture sections provided between the signal lines and the auxiliary capacitors; and a display image separator configured to separate the display image according to a plurality of viewpoints; and a shield configured to block potential crosstalk-causing diffraction rays which have passed through the display image separator and into the aperture sections.

Maeda teaches auxiliary capacitors. (Fig. 2, Pg. 14, ¶[0328]) in addition to an improvement of the aperture ratio through the use of a low temperature polycrystalline Si-transistor (Pg. 12, ¶[0307]).

Sonehara teaches a multi-viewpoint-light-beam-group generating device. (Col. 1, ll. 45-51).

Yamazaki teaches an auxiliary electrode which necessarily requires extra wiring (Fig. 11A: 23, Col. 24, ll. 19-21).

Murukami et al. teaches prevention of crosstalk. (Col. 10, ll. 16-21).

Fujiwara, Maeda, Sonehara, Yamazaki and Murukami are analogous because they are all concerned with the same endeavor, Display Apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by Fujiwara with the teachings of Maeda, Sonehara and Murukami since such a modification would have prevented crosstalk in the display device.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. A US Patent to Takeda et al. (7,304,703), Okishiro (7,027,023), a US Patent Application Publication to Vranish (2002/0000977) and a US Patent to Hirimai ((7,446,753).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Steinberg whose telephone number is (571)270-7617. The examiner can normally be reached on Monday-Friday 7:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7961. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFREY STEINBERG/
Examiner, Art Unit 2629

/Richard Hjerpe/
Supervisory Patent Examiner, Art Unit 2629